

State of West Virginia  
Department of Environmental Protection - Office of Oil and Gas  
Well Operator's Report of Well Work

API 47-017-06411H6A County Doddridge District Southwest  
Quad Oxford 7.5' Pad Name OXFD11HS Field/Pool Name Oxford  
Farm Name MORRIS, I. L. Well Number OXFD11CHS  
Operator (as registered with the OOG) CNX Gas Company LLC  
Address P.O. Box 1248 City Jane Lew State WV Zip 26378

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top Hole Northing 4,335,751.00 m Easting 520,424.00 m  
Landing Point of Curve Northing 4,335,975.88 m Easting 520,391.55 m  
Bottom Hole Northing 4,337,736.24 m Easting 519,722.93 m

Elevation (ft) 1340' GL Type of Well  New  Existing Type of Report  Interim  Final  
Permit Type  Deviated  Horizontal  Horizontal 6A  Vertical Depth Type  Deep  Shallow  
Type of Operation  Convert  Deepen  Drill  Plug Back  Redrilling  Rework  Stimulate  
Well Type  Brine Disposal  CBM  Gas  Oil  Secondary Recovery  Solution Mining  Storage Other \_\_\_\_\_  
Type of Completion  Single  Multiple Fluids Produced  Brine  Gas  NGL  Oil Other \_\_\_\_\_  
Drilled with  Cable  Rotary

Drilled Media Surface hole  Air  Mud  Fresh Water Intermediate hole  Air  Mud  Fresh Water  Brine  
Production hole  Air  Mud  Fresh Water  Brine

Mud Type(s) and Additive(s)

Mineral Oil Based Mud, Bactericide, Polymers and Weighting Agents.

Date Permit Issued 02/12/2014 Date drilling commenced 06/26/2014 Date drilling ceased 10/02/2014  
Date completion activities began 03/31/2015 Date completion activities ceased 04/17/2015  
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 50', 620' Open mine(s) (Y/N) depths N  
Salt water depth(s) ft 1,810' Void(s) encountered (Y/N) depths N  
Coal depth(s) ft None Reported Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

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Reviewed by: 7 2015  
Gorr, Kevin  
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API 47-017-06411H6A Farm name MORRIS, I. L. Well number OXFD11CHS

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement Circulate (Y/N) * Provide details to the right *
Conductor	24"	20"	100'	N	J-55 94# / 100'	N/A	Y
Surface	17 1/2"	13 3/8"	729'	N	J-55 54.5# / 729'	N/A	Y
Coal	-	-	-	-	-	-	-
Intermediate 1	12 1/4"	9 5/8"	2630'	N	J-55 36# / 2630'	N/A	Y
Intermediate 2	-	-	-	-	-	-	-
Intermediate 3	-	-	-	-	-	-	-
Production	8 3/4"	5 1/2"	13387'	N	P-110 20# / 13387'	N/A	N
Tubing	5 1/2"	2 3/8"	6971'	N	P-110 4.7# / 6971'	N/A	N
Packer Type and Depth Set		None					

Comment Details \_\_\_\_\_

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft 3/sks)	Volume (ft 3)	Cement Top (MD)	WOC (hrs)
Conductor	Class A	127	15.2	1.18	150	Surface	24
Surface	Class A	577	15.6	1.18	679	Surface	8
Coal	-	-	-	-	-	-	-
Intermediate 1	Class A	1009	15.6	1.18	1190	Surface	8
Intermediate 2	-	-	-	-	-	-	-
Intermediate 3	-	-	-	-	-	-	-
Production	Class A (Lead) / Class A (Tail)	809 / 1682	14.2 / 14.8	1.24 / 1.25	1003 / 2103	2100'	8
Tubing	-	-	-	-	-	-	-

Drillers TD (ft) 6818' Loggers TD (ft) 6905'

Deepest formation penetrated: Onondaga Plug back to (ft) 4595'

Plug back procedure: Solid Plug from 6818'-4595'

Kick Off Depth (ft) 4595'

Check all wireline logs run  caliper  density  deviated/directional  induction  
 neutron  resistivity  gamma ray  temperature  sonic

Well Cored  Yes  No  Conventional  Sidewall Were Cuttings Collected  Yes  No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING \_\_\_\_\_  
Conductor - No centralizers used. Fresh Water - Bow spring centralizers on first joint then every fourth joint to 100 feet from surface.  
Intermediate - Bow spring centralizers one on the first two joints and every fourth joint until inside surface casing. Production - Rigid bow spring centralizer on first joint then every 2 casing joints (free floating) through the lateral and the curve. (Note: cementing the 5 1/2" casing completely in open hole lateral and curve.)

WAS WELL COMPLETED AS SHOT HOLE  Yes  No DETAILS Plug and Perforation Shot Hole

WAS WELL COMPLETED OPEN HOLE  Yes  No DETAILS \_\_\_\_\_

WERE TRACERS USE  Yes  No TYPES OF TRACER(S) USED \_\_\_\_\_

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API 47-017-06411H6A

Farm name MORRIS, I. L.

Well number OXFD11CHS

**PERFORATION RECORD**

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number Of Perforations	Formation(s)
					See Attached

Please insert additional pages as applicable.

**STIMULATION INFORMATION PER STAGE**

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Avg Pump Rate (BPM)	Avg Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen / other (gals)
								See Attached

Please insert additional pages as applicable.

API 47-017-06411H6A

Farm name MORRIS, L.L.

Well number OXFID11CHS

PERFORATION RECORD

Stage	No.	Perforation date	Perforated from	Perforated to	Number Of	Formation(s)
			MD ft.	MD ft.	Perforations	
	1	3/31/2015	13329	13327	12	Marcellus
	2	3/31/2015	13262	13119	40	Marcellus
	3	4/1/2015	13085	12942	40	Marcellus
	4	4/1/2015	12908	12765	40	Marcellus
	5	4/1/2015	12731	12588	40	Marcellus
	6	4/2/2015	12554	12411	40	Marcellus
	7	4/3/2015	12377	12234	40	Marcellus
	8	4/3/2015	12200	12057	40	Marcellus
	9	4/3/2015	12023	11880	40	Marcellus
	10	4/4/2015	11846	11703	40	Marcellus
	11	4/7/2015	11669	11526	40	Marcellus
	12	4/8/2015	11492	11349	40	Marcellus
	13	4/8/2015	11315	11172	40	Marcellus
	14	4/8/2015	11138	10995	40	Marcellus
	15	4/9/2015	10961	10818	40	Marcellus
	16	4/10/2015	10784	10641	40	Marcellus
	17	4/11/2015	10607	10464	40	Marcellus
	18	4/11/2015	10430	10287	40	Marcellus
	19	4/11/2015	10253	10110	40	Marcellus
	20	4/12/2015	10076	9933	40	Marcellus
	21	4/12/2015	9899	9756	40	Marcellus
	22	4/12/2015	9722	9579	40	Marcellus
	23	4/12/2015	9545	9402	40	Marcellus
	24	4/13/2015	9368	9225	40	Marcellus
	25	4/13/2015	9191	9048	40	Marcellus
	26	4/13/2015	9014	8871	40	Marcellus
	27	4/14/2015	8837	8694	40	Marcellus
	28	4/14/2015	8660	8517	40	Marcellus
	29	4/14/2015	8483	8340	40	Marcellus
	30	4/15/2015	8306	8163	40	Marcellus
	31	4/15/2015	8129	7986	40	Marcellus
	32	4/16/2015	7952	7809	40	Marcellus
	33	4/16/2015	7775	7632	40	Marcellus
	34	4/16/2015	7598	7456	40	Marcellus
	35	4/17/2015	7422	7280	40	Marcellus
	36	4/17/2015	7246	7104	40	Marcellus

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STIMULATION INFORMATION PER STAGE

Stage No.	Stimulations Date	Avg Pump Rate (BPM)	Avg Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen / other (gals)
1	3/31/2015	74.5	8533	7158	3698	100850	3648	3156
2	3/31/2015	81	8232	6561	3357	234950	8123	3329
3	4/1/2015	81.5	7979	6865	3385	233650	6628	3223
4	4/1/2015	84.3	7909	7902	3492	235250	6497	3225
5	4/1/2015	84.9	8102	7597	3618	234200	6582	3255
6	4/2/2015	78.4	8249	6952	3918	234450	6792	3424
7	4/3/2015	80.1	7935	6575	4715	234200	6457	3270
8	4/3/2015	85.1	8134	7130	4005	234800	6476	3265
9	4/3/2015	84.5	8043	6641	4581	234200	6440	3269
10	4/4/2015	94.5	8647	7173	3984	233750	6760	3235
11	4/7/2015	83	8227	7272	3765	233200	6166	3273
12	4/8/2015	91.5	8381	6842	4435	234150	6432	3339
13	4/8/2015	82.7	7598	8382	3841	233900	6677	3289
14	4/8/2015	93.6	8129	7673	3734	234500	6577	3269
15	4/9/2015	97.5	8280	8011	4050	234450	5925	3242
16	4/10/2015	93	8182	7974	4372	234550	5716	3233
17	4/11/2015	95	8414	8275	3828	234950	6388	3265
18	4/11/2015	93.5	8316	7687	3556	234800	6321	3234
19	4/11/2015	90.1	7716	7617	3675	234350	6469	3308
20	4/12/2015	86	7562	8398	4482	233400	5481	3209
21	4/12/2015	90.1	8112	7977	3391	234150	6423	3257
22	4/12/2015	79	7715	7778	3265	234950	6758	3270
23	4/12/2015	88.5	7756	7979	3517	233750	5698	3227
24	4/13/2015	92	8168	8429	3724	233700	5210	3216
25	4/13/2015	84.3	7677	7684	4113	234450	6469	3243
26	4/13/2015	94.3	8167	8092	3949	236550	5224	3211
27	4/14/2015	94.7	8132	7901	3855	236050	5888	3237
28	4/14/2015	93.5	8020	7950	3673	233950	6155	3210
29	4/14/2015	95.6	7923	8010	4105	233750	5806	3200
30	4/15/2015	87.7	7929	9043	4287	222200	5060	3177
31	4/15/2015	89	7996	8351	4272	233700	5336	3224
32	4/16/2015	77.8	8122	7925	5136	234000	10562	9791
33	4/16/2015	96.6	8073	7002	4270	234150	6125	3287
34	4/16/2015	83.4	7606	8320	4082	235000	5151	3187
35	4/17/2015	88.3	7290	8062	4031	234550	5170	3155
36	4/17/2015	94.3	7804	8041	4090	234000	6045	3251

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LITHOLOGY / FORMATION	TOP DEPTH IN FT	BOTTOM DEPTH IN FT	TVD	TOP DEPTH IN FT	BOTTOM DEPTH IN FT	TVD	DESCRIBE ROCK TYPE AND RECORD QUANTITY	TYPE OF FLUID
	0	130	130	0	130	130		
SHALE	130	310	310	130	310	310		
50/50: SHALE/SS	310	340	340	310	340	340		
80/20: SHALE/SS	340	370	370	340	370	370		
SHALE	400	430	430	400	430	430		
80/20: SHALE/SS	430	460	460	430	460	460		
60/40: SHALE/SS	460	490	490	460	490	490		
60/40: SS/SHALE	490	520	520	490	520	520		
SHALE	520	550	550	520	550	550		
80/20: SHALE/SS	550	580	580	550	580	580		
60/40: SHALE/SS	580	610	610	580	610	610		
60/40: SS/SHALE	610	670	670	610	670	670		
70/30: SS/SHALE	670	700	700	670	700	700		
90/10: SS/SHALE	700	790	790	700	790	790		
CEMENT	790	820	820	790	820	820		
SHALE	820	1090	1090	820	1090	1090		
50/50: SHALE/SS	1090	1150	1150	1090	1150	1150		
SHALE	1150	1210	1210	1150	1210	1210		
SS	1210	1390	1390	1210	1390	1390		
SHALE	1390	1450	1450	1390	1450	1450		
SS	1450	1480	1480	1450	1480	1480		
70/30: SS/SILTSTONE	1480	1510	1510	1480	1510	1510		
SILTSTONE	1510	1540	1540	1510	1540	1540		
90/10: SS/SILTSTONE	1540	1570	1570	1540	1570	1570		
SS	1570	1630	1630	1570	1630	1630		
80/20: SS/SILTSTONE	1630	1660	1660	1630	1660	1660		
SILTSTONE	1660	1720	1720	1660	1720	1720		
70/30: SILTSTONE/SS	1720	1750	1750	1720	1750	1750		
SS	1750	1810	1810	1750	1810	1810		
90/10: SS/SILTSTONE	1810	1870	1870	1810	1870	1870		
70/30: SS/SILTSTONE	1870	1900	1900	1870	1900	1900		
80/20: SILTSTONE/SS	1900	1930	1930	1900	1930	1930		
50/50: SILTSTONE/SS	1930	1960	1960	1930	1960	1960		
SHALE	1960	2020	2020	1960	2020	2020		
80/20: SS/SILTSTONE	2020	2050	2050	2020	2050	2050		
BIG LIME FORMATION (LS)	2050	2080	2080	2050	2080	2080		
80/20: SS/SHALE	2080	2110	2110	2080	2110	2110		

API 47-017-06411H6AFarm name MORRIS, I. L.Well number OXFD11CHS

LITHOLOGY / FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY TYPE OF FLUID (FRESHWATER,BRINE,GAS,H2S, ETC)
	DEPTH IN FT	DEPTH IN FT	DEPTH IN FT	DEPTH IN FT	
	TVD	TVD	MD	MD	
LS	2110	2200	2110	2200	
70/30: LS/SS	2200	2230	2200	2230	
LS	2230	2260	2230	2260	
BIG INJUN (SS)	2260	2290	2260	2290	
SS	2290	2320	2290	2320	
80/20: SS/SILTSTONE	2320	2410	2320	2410	
90/10: SS/SILTSTONE	2410	2440	2410	2440	
50/50: SS/SILTSTONE	2440	2500	2440	2500	
COFFEE SHALE (60/40: SILTSTON	2500	2530	2500	2530	
50/50: SILTSTONE/SH	2530	2560	2530	2560	
60/40: SHALE/ SILTSTONE	2560	2740	2560	2740	
GORDON (SS)	2740	2770	2740	2770	
SS	2770	3340	2770	3340	
80/20: SS/SHALE	3340	3490	3340	3490	
WARREN (SS)	3490	4930	3490	4930	
BENSON SAND (SS)	4930	5200	4930	5200	
ALEXANDER SAND	5200	6610	5200	6610	
BURKETT	6610	6700	6610	6700	
TULLY	6700	6760	6700	6760	
MARCELLUS	6760	6820	6760	6820	
ONONDAGA	6820	6905	6820	6905	



# Hydraulic Fracturing Fluid Product Component Information Disclosure



Job Start Date:	3/31/2015
Job End Date:	4/17/2015
State:	West Virginia
County:	Doddridge
API Number:	47-017-06411-00-00
Operator Name:	CONSOL Energy Inc.
Well Name and Number:	OXFD 11 CHS
Longitude:	-80.76375000
Latitude:	39.17066670
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	6,818
Total Base Water Volume (gal):	9,278,724
Total Base Non Water Volume:	0

## Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Customer & CWS	Base Fluid & Mix Water	Water	7732-18-5	100.00000	89.89880	
Sand (Proppant), DWP-111, DWP-614, DWP-901, DWP-NE1	CWS	Propping Agent, Gel Slurry, Viscosifier, Breaker, Non-Emulsifier	Crystalline silica (Quartz)	14808-60-7	100.00000	9.57829	
			Hydrochloric acid	7647-01-0	35.00000	0.39206	
			2-Propenoic acid, polymer with 2-propenamamide, sodium salt	25987-30-8	40.00000	0.02902	
			Distillates (petroleum), hydrotreated middle	64742-46-7	60.00000	0.02471	
			Calcite	471-34-1	1.00000	0.01269	
			Illite	12173-60-3	1.00000	0.00967	
			Isopropanol	67-63-0	40.00000	0.00638	
			Dimethylcocoamine, bis (chloroethyl) ether, diquatary ammonium salt	68607-28-3	40.00000	0.00638	
			Methanol	67-56-1	15.00000	0.00575	
			Goethite	1310-14-1	0.10000	0.00540	
			Biolite	1302-27-8	0.10000	0.00419	
			Apatite	64476-38-6	0.10000	0.00419	

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		Sorbitan monooleate	1338-43-8	5.00000	0.00363
		Poly(oxyethylene)nonylphenol ether	9016-45-9	5.00000	0.00363
		Ilmenite	98072-94-7	0.10000	0.00358
		Guar gum	9000-30-0	60.00000	0.00295
		Alcohols, C14-15, ethoxylated	68951-67-7	0.10000	0.00168
		Alkenes, C>10 a-	64743-02-8	0.10000	0.00168
		Fatty acids, tall-oil	61790-12-3	0.10000	0.00168
		Modified thiourea polymer	68527-49-1	0.10000	0.00168
		Diallyldimethylammonium chloride	7398-69-8	5.00000	0.00080
		Propargyl Alcohol	107-19-7	0.10000	0.00056
		Quaternary ammonium compounds, bis(hydrogenated tallow alkyl)dimethyl, salts with bentonite	68953-58-2	5.00000	0.00025
		Ammonium Persulfate	7727-54-0	100.00000	0.00011
		Formaldehyde	50-00-0	0.10000	0.00011
		Oxirane, 2-methyl-, polymer with oxirane, monodecyl ether	37251-67-5	1.50000	0.00007
		Sodium chloride	7647-14-5	0.10000	0.00006
Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS					

\* Total Water Volume sources may include fresh water, produced water, and/or recycled water  
\*\* Information is based on the maximum potential for concentration and thus the total may be over 100%

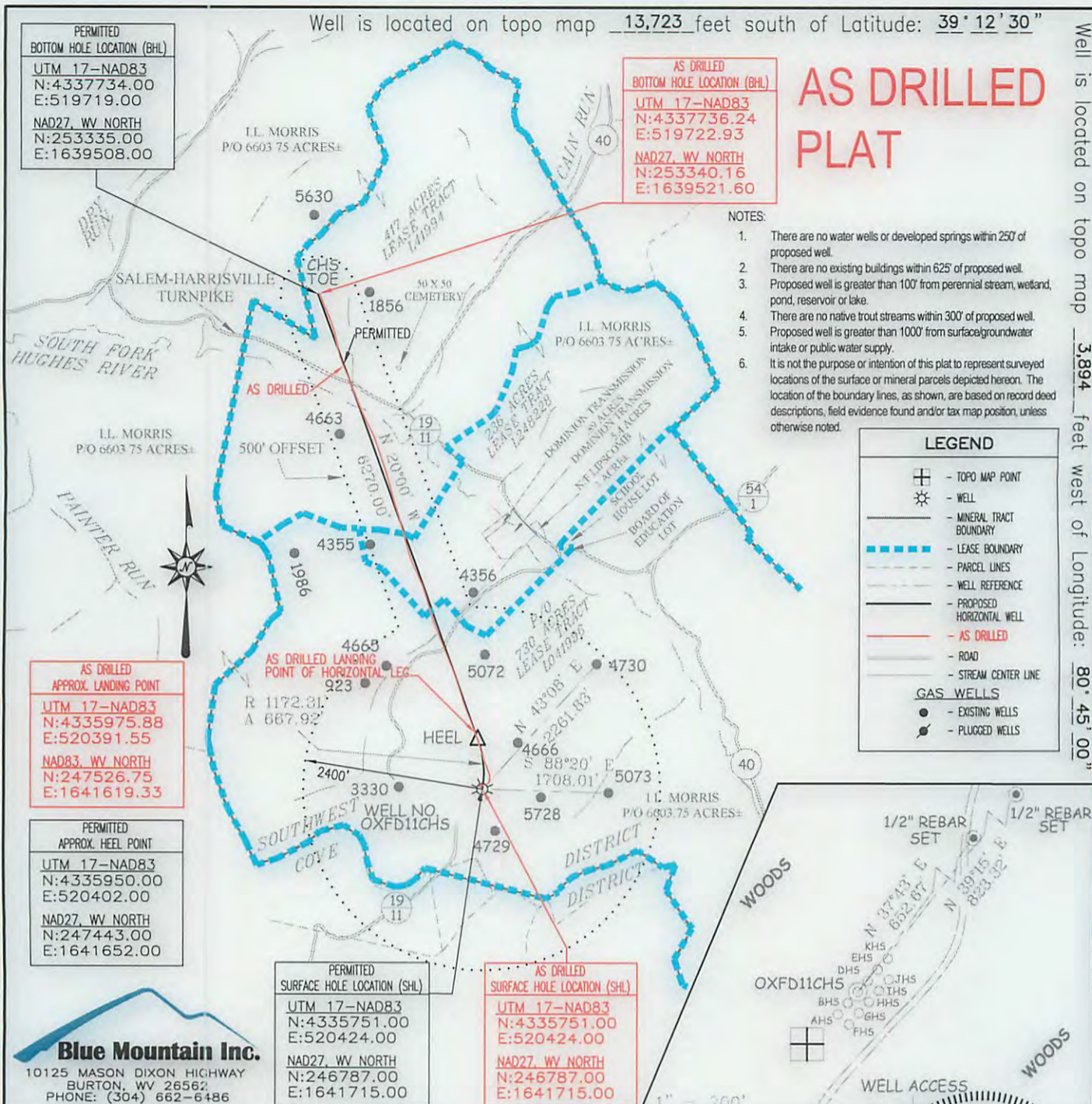
Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.  
Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

17-06411

Well is located on topo map 13,723 feet south of Latitude: 39° 12' 30"

Well is located on topo map 3,894 feet west of Longitude: 80° 45' 00"

# AS DRILLED PLAT



FILE #: OXFD11CHS-AS DRILLED  
 DRAWING #: OXFD11CHS-AS DRILLED  
 SCALE: 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY: 1/2500  
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

Signed: *George D. Six*  
 R.P.E.: \_\_\_\_\_ L.L.S.: P.S. No. 2000



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP  
 OFFICE OF OIL & GAS  
 601 57TH STREET  
 CHARLESTON, WV 25304

DATE: MAY 27, 2015  
 OPERATOR'S WELL #: OXFD11CHS-AS DRILLED  
 API WELL #: 47 17 06411  
 STATE COUNTY PERMIT

Well Type:  Oil  Waste Disposal  Production  Deep  
 Gas  Liquid Injection  Storage  Shallow

WATERSHED: SOUTH FORK HUGHES RIVER ELEVATION: 1,340'  
 COUNTY/DISTRICT: DODDRIDGE / SOUTHWEST QUADRANGLE: OXFORD, WV 7.5'  
 SURFACE OWNER: I.L. MORRIS ACREAGE: 6603.75±  
 OIL & GAS ROYALTY OWNER: LINDSAY A. EDMONDSON, ETAL & STATE OF WEST VIRGINIA (SALEM HARRISVILLE TURNPIKE) ACREAGE: 730, 236, & 417±

DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE   
 PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  PLUG & ABANDON   
 CLEAN OUT & REPLUG  OTHER CHANGE  (SPECIFY): \_\_\_\_\_

TARGET FORMATION: BURKETT ESTIMATED DEPTH: TVD: 6,818'± TMD: 13,437'±  
 WELL OPERATOR CNX GAS COMPANY LLC DESIGNATED AGENT JOE BERRY, JR.  
 Address P.O. BOX 1248 Address P.O. BOX 1248  
 City JANE LEW State WV Zip Code 26378 City JANE LEW State WV Zip Code 26378

10/09/2015